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Patent Application Papers Of:

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For:

PHOTOGRAPHY SHOOTING TENT

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Cross-Reference to Related Applications

[001] This application claims the benefit of U.S. Provisional Application No. 60/444,808, filed February 4, 2003.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[002] The present invention relates to an enclosure for distributing light to a subject to facilitate and enhance digital photography, and other types of photography, such as silver halide film photography.

2. Brief Description of Related Developments

[003] There are many devices designed to provide a bright shadow free environment for photographing subjects. Reflectors, light boxes and other means attempt to direct light to fully illuminate all aspects of the subject. Light boxes are generally designed to enclose the subject so that light from within the box reflects off of multiple background surfaces and surrounds the subject in illumination. U.S Patent Nos. 4,071,883, 4,428,030, and 4,490,776 show examples of such devices.

[004] It is a purpose of this invention to provide a light weight, portable enclosure which is made of light transmitting material to allow light to pass through into the enclosure. A subject positioned in the enclosure is bathed in diffused light from outside the enclosure to enhance the process of taking a photograph.

SUMMARY OF THE INVENTION

- [005] A photography tent is constructed of panels of light weight fabric, such as a color corrected translucent nylon material, supported by a flexible frame. The frame is constructed of flexible steel band stock and sewed into the nylon material forming the side panels. A frame is installed in each of the side, bottom and top panels of the tent. The overall shape of the tent is generally box like or other convenient shape. One panel of the tent is constructed with a front door closable on three sides by hook and loop fasteners or another detachable mechanism.
- [006] Each frame is formed in a closed, generally rectangular loop and is prestressed to support the tent in an expanded condition and to allow the tent to be collapsed into a flattened position.
- [007] The tent is intended for use principally with external light sources, that can be positioned for illuminating the sides, top, bottom, back, and front. Light is diffused, as it passes through the color corrected nylon panels, thereby providing a bright internal space in which subjects can be displayed, fully illuminated, so that a photograph of the subject may be taken.
- [008] For some purposes, a sweep panel, constructed of black or other colored material, may be used as a back drop or to absorb light. The sweep panel is constructed of lightweight cloth such as nylon and may be attached to the internal face of a tent panel by means of a hook and

loop fastener. A removable floor panel constructed of rigid plastic may be provided to add structure to support the subject being photographed.

- [009] In this manner a light weight, portable, light diffusion enclosure is constructed which can be set up in minimum time at any location. It may be used in a vertical or horizontal mode. Its folded flattened storage condition, makes it convenient to carry and store.

BRIEF DESCRIPTION OF THE DRAWINGS

- [0010] The foregoing aspects and other features of the present invention are illustrated in the attached drawing in which:
- [0011] Figure 1 is a front perspective view of the photographic tent of this invention with the front door open;
- [0012] Figure 2 is a front perspective view of the photographic tent of this invention with the front door closed;
- [0013] Figure 3 is a sectional view of the photographic tent of this invention taken along section lines 3-3 shown in figure 1;
- [0014] Figure 4 is a sectional view of the photographic tent of this invention taken along section lines 4-4 shown in figure 1;
- [0015] Figure 5 is a bottom perspective view of the photographic tent of this invention;
- [0016] Figure 6 illustrates the collapsing operation of the photographic tent of this invention; and

[0017] Figure 7 is a illustration of the accessories used with the photographic tent of this invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

[0018] A photography tent 1 is constructed in the general shape of a rectangular box. As shown in figure 1, a series of panels including side panels 2 and 3, front and rear panels 4 and 5, and top and bottom panels 6 and 7 are connected to form a complete enclosure surrounding an interior stage 8. Each of the panels is constructed from a light weight fabric, such as, a color corrected translucent nylon material. Each of the side panels 2 and 3 and the top and bottom panels 6 and 7 is supported by an independent flexible rectangular frame 2a, 3a and 6a, 7a, respectively. Each of the frames is constructed in a closed substantially rectangular loop of a flexible steel band material and is enclosed in stitched slots 10-13 sewed into each of the panels 2, 3 and 6, 7. The overall shape of the tent 1, as shown in the figures, is generally box like, but could be other convenient shapes.

[0019] In order to provide full access to stage 8, an opening 9 is constructed in front panel 4. Access opening 9 is closable by means of front door 16 constructed in front panel 4. Door 16 is hinged to one side of the opening by a stitched joint and held in the closed position by hook and loop fasteners 14. As shown in figure 2 a zippered slot 24 is constructed in the door to provide more limited access for a camera lens (not shown). Door 16 may be rolled to one side and secured to store it out of the way when working with the interior stage 8. A bottom door 17, shown in figure 5, is constructed to be completely removeable from a bottom access opening 15 and

is attached to the border of the bottom panel 7 by hook and loop fasteners 29 or another detachable mechanism. Bottom door 17 allows use of the tent 1 in both horizontal (figure 1) and vertical (figure 5) modes. In addition by removing door 17 completely a more distant photographic view is made available.

[0020] An access port 18 is constructed in top panel 6 or any other side panels 2 and 3, in the form of a slit in the panel material that is closed by means of zipper 19, as shown in figure 2. Access port 18 provides further access for a camera lens (not shown) from a different angle.

[0021] The frames 2a,3a and 6a,7a are prestressed as they are restrained within their stitched slots 10-13 so that they assume a bowed shape. The bowed shape is forced outward or inward to allow the tent to be collapsed or expanded. In the expanded state, the cooperating forces of the frames 2a,2b and 6a,7a maintain the tent in the open position. The frames are constructed of steel band stock that is selected for its ability to flex without twisting.

[0022] The tent collapses into a flattened position by applying a force inward, diagonally on one corner of the tent, such as by hand 25 placed at the juncture 26 of panels 2 and 6, as shown in figure 6b. As shown in figure 6c, the angle formed by the adjacent panels 2 and 6 is reversed and aligned with its opposing joint to allow side 6 to be folded over side 2, thereby flattening the tent 1. To facilitate the collapse of the tent, the frames of adjoining sides are slightly separated by a web 27 of fabric sufficient to allow the folding operation.

[0023] The lighting tent 1 can be provided in multiple sizes, for example: from a small 15"X 15"X 22.75" which collapses to 24"X16"X3" to a large 18"X18"X27.5" which flattens to 28"X19"by 3". In the flattened position, the tent may be stored in carrying case 31 shown in figure 7 for convenient portability.

[0024] The tent 1 is intended for use principally with external light sources 21, as illustrated in figure 1, which can be positioned for illuminating the sides, top, bottom, back, and front. Light is diffused, as it passes through the color corrected nylon panels, thereby providing a bright internal stage 8 in which subjects can be displayed, fully illuminated, so that a photograph of the subject may be taken. The diffusion of external light, keeps the occurrence of shadows to a minimum. An internal light source is not needed, thereby eliminating the need for suitable structure and access for mounting lights. This also allows the use of a wide variety of lighting sources, for example: daylight, HMI, electronic flash , fluorescent, quartz and tungsten light sources.

[0025] For some purposes, a sweep panel 20, constructed of black or other colored material, and may be used as a back drop for the subject or to absorb light. The sweep panel 20 is constructed of lightweight cloth such as nylon, having a light absorbing color, such as black, and may be attached to the internal face of a tent panel by means of hook and loop fasteners 32. The sweep panel 20 provides a suitable contrast to the product being photographed, a seamless horizon and more complete product definition. A removable floor panel, such as 22 or 23 (figure 7b and

7c) may be used to add a floor structure to panel 7 or panel 5, when oriented at the bottom, for supporting the subject 30 being photographed.

[0026] As shown in figures 6a-6d, the frames are designed to unfold into a box like shape that is maintained in expanded form by the bowed prestressed nature of the frames. Such arrangements are constructed using well known tent manufacturing techniques. In this manner a light weight, portable, light diffusion enclosure is constructed which can be set up in minimum time at any location. Its folded flattened storage condition, makes it convenient to carry and store.

[0027] In operation the tent 1 is unsheathed from its carrying case (not shown) and popped out into its expanded, box like condition. As shown in figure 7b and 7c, rigid floor panels 22 and 23 are constructed having shapes that match the side panel that is used as the floor. This depends on the orientation of the tent 1 (compare figures 1 to figure 5). One of the floor panels is inserted into place through the opened door 16 of the tent 1 to provide a rigid support for the subject of the photograph. A suitable backdrop, such as a black sweep 20, is attached in place in the interior stage 8 by means of hook and loop fasteners 28, as shown in figure 3.

[0028] The exterior of the tent 1 is illuminated by light sources 21 of a type that best suits the subject and method of photography. The camera lens is inserted through zippered slot 24, in the opening 9 and set up for a photography session. After use, the tent 1 is

collapsed by reversing the junction of a pair of adjacent support frames 2a,6a, or 3a,7a, etc. This forces the adjoining panels to reverse their relative angle so that the joint aligns with the diagonally opposing joint to place the tent in a flattened position, so that it can be returned to its carrying case 27.